

diminished in energy to that of a mere depression after going inland at the head of the Gulf.

The succeeding hurricane, that of the 17th-18th, was first definitely located on the morning of the 17th south of Cape San Lucas. The storm moved at great speed up the west coast of Lower California, was centered with much lessened intensity in approximately 26° N., 114° W., 24 hours later, and thereafter disappeared from observation. Vessels that made special reports on the cyclone mentioned the rapidity with which the cyclone made up relative to their positions. The S. S. *Antigua*, Captain Beyer, reported that "the wind shifts were fast." Second Officer J. Bronold, of the S. S. *Katrina Luckenbach*, said there were no advance warnings of the storm, but that the wind increased sharply to a gale, the wind becoming northeast, force 8, at 10 a. m. of the 17th. It was northeast 9 at 10:50 a. m., in $22^{\circ}40'$ N., $110^{\circ}38'$ W., barometer 29.43, with mountainous seas which swept over the deck, and torrential rain. The ship lay hove to. Visibility was nil. At local noon, in $22^{\circ}48'$ N., $110^{\circ}50'$ W., the wind increased to a hurricane which continued until 2:30 p. m., when the wind shifted to west-northwest. The lowest barometer, 28.82, occurred at this time, in $23^{\circ}00'$ N., $111^{\circ}07'$ W. At 6 p. m. the ship, with rapidly rising barometer and moderating winds, resumed her course.

In a copy of intercepted radio reports received by the S. S. *Antigua*, Chief Officer Croft lists one ship other than the *Katrina Luckenbach* which encountered hurricane winds on the afternoon of the 17th. That was the British steamer *Ontariolite*, in $22^{\circ}55'$ N., $110^{\circ}36'$ W., at 5 p. m., local time, with the accompaniment of no visibility and dangerous seas.

On the 18th the final report of gale winds in connection with this storm was furnished by the Japanese steamer *Tatsuna Maru* which had a west wind of force 8, barometer 29.69, early in the morning, in $24^{\circ}28'$ N., $112^{\circ}23'$ W.

The principal reported damage done by this storm was to tuna fishing boats and other small craft that had taken refuge in Magdalena Bay prior to the blow. Some of these were washed ashore and damaged; and one boat, the *Enterprise*, was reported as wrecked on Crescenta Island, from which the crew of 12 was rescued by the Panama Pacific liner *California*.

Fog.—Fog continued frequent along the central and western parts of the northern steamship routes, where it occurred on 15 to 40 or more percent of the days, well distributed through the month. East of 160° W. fog was much less frequent and was observed mostly about the middle of August. Widely scattered fog occurred on a few days in middle latitudes. There were 4 days with fog reported off the Washington coast and 12 days with fog off the California coast.

TYPHOONS AND DEPRESSIONS OVER THE FAR EAST, AUGUST 1936

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Three typhoons and two depressions during the month of August 1936 are briefly described below.

Typhoon, August 6 to 14.—A depression formed about 350 miles east-southeast of Yap and intensified as it moved rapidly west-northwest, then northwest, as it crossed the one hundred and thirtieth meridian. It continued to the Balintang Channel, shifting to the West when about 60 miles southwest of Basco. In 2 days it reached the Gulf of Tong King and filled up rapidly as it entered the continent.

At Basco, Batanes Islands, the barometric minimum as the typhoon approached the locality from the southeast was about 746.7 mm (29.389 inches).

Typhoon, August 11 to 18.—A depression appeared about 300 miles east-southeast of Yap, August 11, moving westerly, and developed into a typhoon when about 120 miles south of Yap. Taking a northwesterly course, it moved rapidly toward northern Luzon passing close to and north of Aparri during the evening of August 15. Continuing on this course, it crossed the China Sea and passed close to and south of Hong Kong, August 17. It was followed for 1 more day into the continent, the last information received being a forecast from Siam stating that the disturbance "was intense west of Laokay" the afternoon of August 18. (Position of Laokay, latitude $22^{\circ}30'$ N., longitude $103^{\circ}57'$ E.)

Aparri reported a minimum of 711.42 mm (28.009 inches) gravitation correction applied, with west-northwest winds of force 10, August 15, 9.16 p. m. Laoag had 726.25 mm (28.592 inches) as its minimum with southwest winds, force 6, August 16, 1 a. m. Basco, Batanes Islands, north of the path of the typhoon, had 730.70 mm (28.768 inches) with east-southeast winds, force 8, August 16, 2 a. m. As the typhoon approached Pratas the 2 p. m. observation broadcast was 737.1 mm (29.020 inches), northeast winds force 12. From newspapers it was learned that the minima observed at Hong Kong and Gap Rock were 29.07 inches (Aug. 17, 3 a. m.) and 28.53 inches (Aug. 17, 4 a. m.), respectively. At the Royal Observatory in Hong Kong, winds reached the velocity of 131 miles per hour in two gusts (Aug. 17, 3.30 a. m. and 4 a. m.)

The loss of life due to this typhoon as it passed the Philippines was 7, with 10 persons reported missing, according to the newspapers of August 19. In Hong Kong a score of lives were lost. In the Philippines the United States Coast and Geodetic Survey vessel *Fathomer* was forced aground in the Port San Vicente harbor, a short distance east-northeast of Aparri. The ship was fighting winds of force 12, which threw her upon the beach. As the harbor is not large, there were no large waves to damage the ship, and she was refloated later without much difficulty. Meteorological data obtained by the officers of the vessel have not arrived at the Observatory at the present writing. In and around Hong Kong the S. S. *Sunning* was a total loss and at least 10 other ships were forced aground. This typhoon was considered the worst disaster there due to weather since 1923.

Depression, August 18 to 22.—A mild depression of little importance formed southwest of Guam, moved northwest, gradually inclining to the west-northwest, and disappeared when about 400 miles east of Batanes Islands.

Typhoon, August 21 to 30.—About 300 miles north of Guam a depression formed, moved west, and then gradually inclined to the west-northwest and northwest. It developed into a storm of considerable intensity as it approached Naha, Nansei Islands. When about 100 miles south-southeast of Naha, it changed its course to the west-northwest, thus moving into the Eastern Sea, where it recurved to the northeast (Aug. 26) when about 200 miles away from the continent. After recurving it moved rapidly northeastward across Japan Sea toward Saghalin Island. One thousand five hundred and sixteen lives were lost as the typhoon crossed southeastern Korea.

Depression, August 24 to 28.—A depression was indicated over the China Sea, August 24, which intensified somewhat while remaining stationary for 2 days about

300 miles west of northern Luzon. It then moved northwest and west, passing over the northern part of Hainan Island and across the Gulf of Tong King into Indochina.

SEA-SURFACE TEMPERATURE SUMMARY FOR THE OUTER FLORIDA STRAIT, 1912-33

By GILES SLOCUM

The monthly mean sea-surface temperatures in the area directly east of the Florida peninsula, for the period January 1912 to December 1933 inclusive, are given in the accompanying table.

The area from which these temperature observations were taken embraces five 1° squares, namely: Between 25° N. and 30° N. and between 79° W. and 80° W. This area nearly coincides with the confines of the Gulf Stream in these latitudes.

This is the seventh of a series of similar temperature-history tabulations of sea surface temperatures for small areas in American waters. The first of the series appeared in the November 1934 issue of the MONTHLY WEATHER REVIEW, and the last previous tabulation appeared in the June 1935 issue.

Monthly and annual mean sea-surface temperatures in the outer Florida Strait, 1912 to 1933, inclusive

Year	Total number of observations for the year	January	February	March	April	May	June	July	August	September	October	November	December	Annual
1912.....	673	74.4	73.5	75.8	78.0	79.9	81.2	81.9	83.6	83.0	81.2	78.2	77.4	79.0
1913.....	606	76.1	75.6	77.0	75.6	77.5	80.4	81.6	82.1	82.1	80.3	77.1	75.5	78.4
1914.....	494	74.4	74.3	72.6	76.1	78.3	81.4	83.4	83.8	82.8	81.1	78.9	77.7	78.7
1915.....	319	76.3	74.2	75.6	74.9	78.6	80.8	84.4	83.8	83.0	81.9	79.7	75.4	79.0
1916.....	228	76.0	75.4	72.6	75.2	79.3	81.6	82.7	82.8	82.3	80.1	76.9	74.8	78.3
1917.....	142	74.9	73.0	75.8	76.6	77.5	81.0	82.3	82.9	83.0	79.6	76.0	74.7	78.1
1918.....	54	73.6	76.0	76.3	76.0	78.8	82.0	81.2	83.2	82.6	80.8	80.2	76.0	78.9
1919.....	137	73.1	72.3	76.9	77.2	78.3	80.8	82.1	83.8	82.1	81.7	78.3	77.5	78.7
1920.....	308	75.4	74.9	74.4	77.7	78.0	80.5	82.4	82.5	83.3	80.0	78.0	75.7	78.6
1921.....	560	75.6	75.1	75.3	76.4	77.5	80.9	82.6	82.9	83.0	81.6	78.6	76.7	78.8
1922.....	743	76.2	74.9	75.7	77.6	79.2	82.3	82.8	83.1	82.9	81.1	79.3	77.5	79.4
1923.....	852	75.8	75.6	76.0	77.8	78.9	80.8	82.2	83.0	82.7	81.2	77.3	77.1	79.0
1924.....	1,111	76.3	74.2	74.0	77.1	79.2	82.6	84.2	84.5	83.8	80.2	77.3	76.0	79.1
1925.....	1,163	76.3	75.1	75.4	76.7	78.9	81.3	82.6	84.0	83.7	82.6	79.9	76.5	79.4
1926.....	1,239	75.0	74.7	74.8	77.7	79.0	81.7	83.5	84.0	83.8	82.0	78.6	77.5	79.4
1927.....	1,352	75.6	76.3	76.0	77.3	79.6	82.4	83.6	84.4	83.7	81.6	79.1	76.7	79.7
1928.....	1,399	74.2	74.7	75.2	76.5	77.6	81.7	82.9	84.0	83.2	81.8	79.0	76.8	79.0
1929.....	1,298	75.8	76.0	76.5	78.1	79.9	80.8	81.9	83.0	82.4	80.4	79.6	77.9	79.4
1930.....	1,216	76.8	75.9	76.4	77.1	79.5	80.4	82.8	83.9	83.3	80.9	77.9	75.9	79.2
1931.....	1,230	75.2	73.8	73.9	75.6	78.4	80.9	83.7	84.1	83.4	81.5	78.4	78.7	79.0
1932.....	1,130	76.9	76.7	76.6	75.5	78.6	81.6	83.8	84.5	83.3	81.7	79.6	77.4	79.7
1933.....	1,243	75.6	76.0	76.1	77.1	79.8	81.1	82.9	83.6	83.4	81.2	78.8	76.8	79.4
Mean (1912-33).....	-----	75.4	74.9	75.4	76.7	78.7	81.3	82.8	83.5	83.0	81.1	78.5	76.6	79.0